AMENDMENT TO THE CLAIMS

Please **AMEND** claims 1 and 21 as follows.

Please **ADD** claims 22-26 as follows.

A copy of all pending claims and a status of the claims is provided below.

1. (currently amended) A method for machining a workpiece made from a titanium-based alloy, comprising:

a) heating of the workpiece in a hydrogen-containing atmosphere, wherein the workpiece takes up hydrogen;

b) cooling of the workpiece;

c) metal-removing machining of the workpiece; and

d) heating of the workpiece in a hydrogen-free atmosphere, wherein hydrogen is released.

2. (previously presented) The method as claimed in claim 1, wherein the workpiece is heated in a vacuum in order for hydrogen to be released.

3. (previously presented) The method as claimed in claim 1, wherein the workpiece is heated to approximately 973 K for hydrogen to be taken up.

4. (previously presented) The method as claimed in claim 1, wherein the hydrogen-containing atmosphere is under a pressure of approximately $5 \cdot 10^3$ Pa.

5. (previously presented) The method as claimed in claim 1, wherein an annealing time in the hydrogen-containing atmosphere is at least 2 hours.

6. (previously presented) The method as claimed in claim 1, wherein the workpiece is cooled in the hydrogen-containing atmosphere.

7. (previously presented) The method as claimed in claim 2, wherein the vacuum is at least $2 \cdot 10^{-3}$ Pa.

8. (previously presented) The method as claimed in claim 1, wherein an annealing temperature in the hydrogen-free atmosphere is at least 773 K.

9. (previously presented) The method as claimed in claim 1, wherein the heating is carried out inductively.

10. (previously presented) The method as claimed in claim 1, wherein a hydrogen concentration in the workpiece after cooling is less than 1.5% by weight in titanium.

11. (previously presented) The method as claimed in claim 10, wherein the hydrogen concentration is 0.5% by weight.

12. (previously presented) The method as claimed in claim 1, wherein at least one of surface oxides and further covering layers are removed from the workpiece prior to the heating.

13. (previously presented) The method as claimed in claim 12, wherein the at least one of surface oxides and further covering layers are removed by an etching solution.

14. (previously presented) The method as claimed in claim 13, wherein the etching solution is a mixture comprising H_2O, HNO_3, HF and H_2O_2.

15. (previously presented) The method as claimed in claim 14, wherein the etching solution is a mixture of 50 ml of H_2O, 50 ml of HNO_3, and 10 ml of a solution of [12 ml of HF + 70 ml of H_2O_2].

16. (previously presented) A workpiece for use in the method as claimed in claim 1, comprising TiAl6V4.

17. (previously presented) The workpiece as claimed in claim 16, wherein lanthanum is admixed with the TiAl6V4.

18. (previously presented) The workpiece as claimed in claim 17, wherein a lanthanum content amounts to 0.3 - 3 atomic%.

19. (previously presented) The workpiece as claimed in claim 16, wherein cerium is admixed with the TiAl6V4.

20. (previously presented) The workpiece as claimed in claim 19, wherein a cerium content is less than 3 atomic%.

21. (currently amended) An alloy for producing a workpiece made from a titanium-based alloy, comprising elemental lanthanum combined with TiAl6V4, the alloy having a lanthanum content of 0.3 – 3 atomic%.

22. (new) The alloy of claim 21, wherein the lanthanum content is above 2 atomic%.

23. (new) The alloy of claim 21, wherein the alloy is a $\alpha + \beta$ alloy.

24. (new) The alloy of claim 21, wherein the alloy includes lanthanum particles having a mean size of greater than 2 μm.

25. (new) The workpiece as claimed in claim 18, wherein the lanthanum content is above 2 atomic%.

26. (new) A method for machining a workpiece made from a titanium-based alloy, comprising:

removing at least one of surface oxides and further covering layers from the workpiece;

heating the workpiece in a hydrogen-containing atmosphere to a temperature of at least 773 K, wherein the workpiece takes up hydrogen;

cooling the workpiece;

metal-removing machining the workpiece; and

heating the workpiece in a hydrogen-free atmosphere, wherein the hydrogen is released.